



Installation Guide

Protect what matters

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Welcome

Thank you for choosing Zappshelter. This guide is intended to help you through the simple steps of installing your Zappshelter to ensure you get the very best out of your product. Whilst conditions may vary from site to site and the photos included in this guide may differ from the product you have, the basic steps are the same.

Please note that these instructions have been provided in good faith and are a guide only. We can accept no liability for damage or injury arising as a result of following these steps. It is the installer's responsibility to ensure best practices are adhered to at all times, and that the necessary risk assessments and method statements have been prepared ahead of the installation.

Whilst every site is different, the basic equipment list is the same for most projects. Ensuring you have the correct equipment on site before you begin can save hours on the job:

- 8m tape measure
- 30m surveyors tape
- Pencil/marker
- Tin snips
- Angle grinder with cutting and grinding blades
- Wire brush
- Welder
- Long spirit level
- Hex driver bits
- Extension leads
- Hammer
- Cordless drill
- 5mm drill bits for steel
- Large adjustable spanner or spanner set
- Socket set
- Spade
- 40m stout rope
- Rough-terrain scissor platform with 6m lift
- All-terrain forklift, telehandler or crane with 8m lift
- Personal protective equipment



Tool checklist

The installation of a Zappshelter is a simple process with the correct equipment. Whilst there are many shortcuts that may be taken, there is no substitute for having the right equipment on the job.



Your Zappshelter has been checked by our quality assurance team throughout the production process and whilst being prepared for despatch. Each Zappshelter is carefully packed into a purpose-made steel crate to minimise the possibility of damage in shipping.

Before commencing the installation process, remove all paperwork from the pack and retain for future reference. It is important to locate the instructions for installation immediately, and use these for reference throughout the project.



Using the checklist provided in the document pack, carefully check off every component in turn, and place neatly so that each part can be easily identified. This will save a considerable amount of time as the project progresses.

Time spent identifying each component makes the installation process faster and easier.

Unpacking

Unpacking a Zappshelter is straightforward. However, some of the most common mistakes are throwing away a component or the instructions. Taking extra care at this stage can save time later.

Ensure all components are stored away from the main sheltered area to avoid injury or accident from falling objects.

Before the installation commences, ensure the site is properly prepared and inspected. Not only is this essential for a swift and successful Zappshelter installation, but it makes the site safer too.

Ensure the area where the Zappshelter is to be installed is level, and free from obstacles, large stones or pot-holes that may cause access equipment to be unstable or obstruct progress.

Check the width of gateways and access routes that are to be used when moving containers. Ensure there are no overhead cables on the site that will interfere with either the building process and the finished Zappshelter.

Ensure a suitable power supply is available for power tools, battery chargers etc.

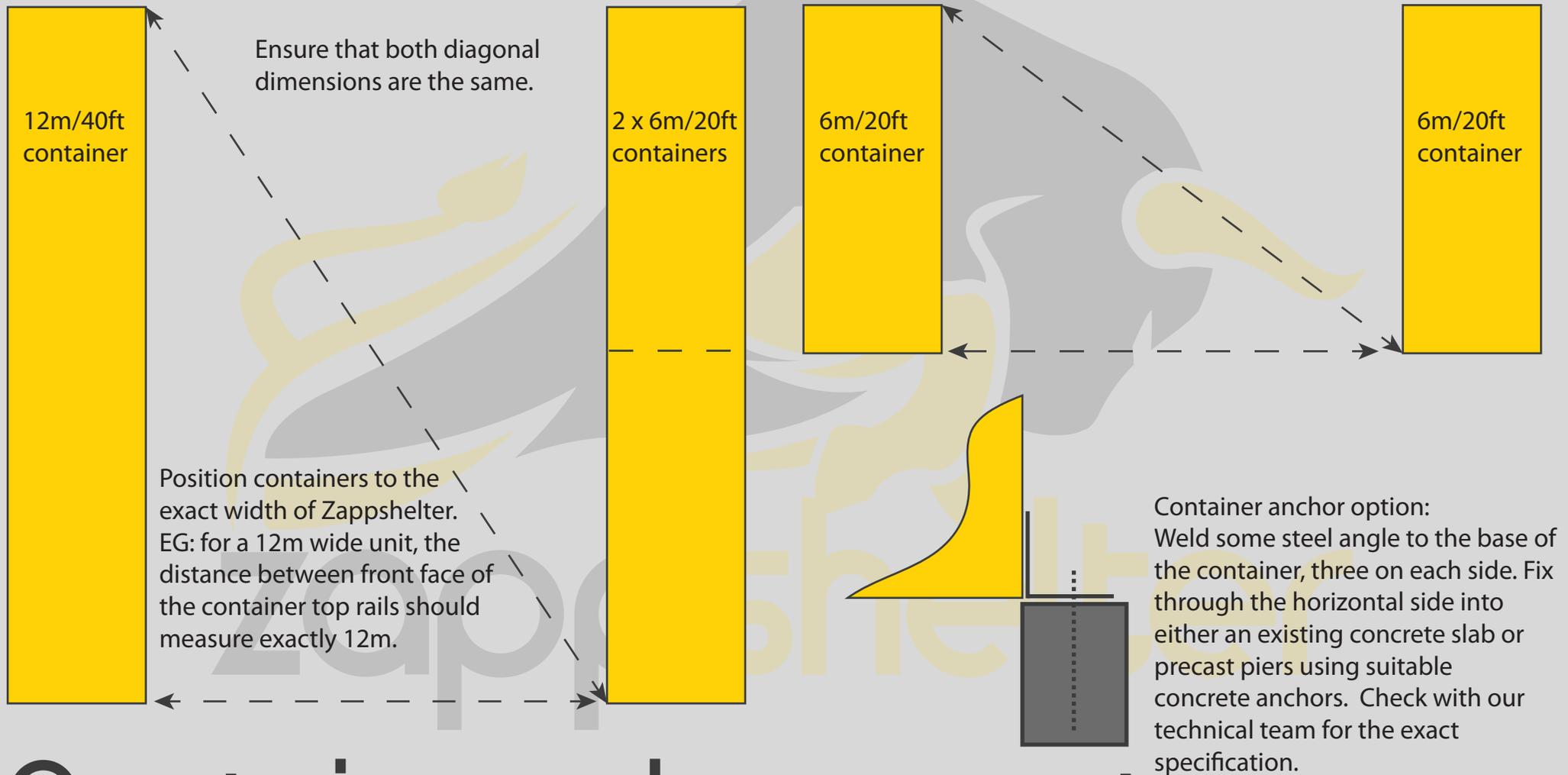
If no refuse skip is available, mark out a designated area for waste to ensure the site is kept tidy and free from trip hazards.

Ensure you have sufficient labour for the task on hand. A minimum of three on site is recommended.



Preparing for installation

Keep an eye on the weather forecast in the days leading up to the Zappshelter installation. Strong wind, heavy rain, icy conditions and falling snow can make the project unsafe. It is strongly advised to undertake the pulling of the cover on a calm, dry day.



Container placement

Placement of the containers is critical. Get it right at this stage and the job will go a lot more smoothly. Not only do they have to be spaced the exact distance apart at both ends, but they have to be in line across the ends too, to ensure the Zappshelter is square.

Fixing or weighting the containers is strongly advised. If they are being used as stores or workshops with a lot of heavy equipment then this will help act as ballast. If they are simply there to support the Zappshelter and not being used for storage, we recommend either filling them with heavy ballast such as bags of sand or stone, or bolting them down with heavy duty concrete anchors. Please speak to our technical team for more information.

Place the first end bracket on top of the corner casting at the furthest point of the container, with the tensioning outrigger facing the opposite container.

Locate and fasten the two U bolts loosely. Whilst you need to ensure the rail is secure, some flexibility at this stage can help when positioning the arches.

Insert a section of bottom rail into the end bracket and join next section with a rail connector. For 6m containers, two connectors are required. For 12m containers, there are five.

At each connection point, fix through the predrilled holes with the tekscrews provided.

Ensure the spigots on connectors face the opposite container. These are where the arches locate.

Fit second end bracket at end of the bottom rail.

Each rail connector will be welded to the container roof using the spacer that protrudes from underneath, but this is completed later to ensure the structure is as flexible as possible at this stage.



Installing the bottom rail

As with all projects, safety is a high priority. When lifting and carrying heavy metal sections, ensure you have the correct protective equipment and ask for help with lifting if needed.

If using mechanical lifting equipment such as a forklift, crane or hoist, ensure they are used by competent and trained operators only. An inexperienced driver can lead to accidents and injuries.



Each arch has a number of sections which are joined using tee joiners. These joiners are designed to be a tight fit and may require force to ensure they are properly located.

When joining the sections, ensure all the protruding lugs point towards the inside of the arch. These are for attaching bracing later.

Once each piece is butted together, fix into the joiners using the tek screws provided. For our wider units, the tek screws are replaced with bolts.



Ensure no fixings are inserted on the outside face of the arch as they may tear the cover.

Please note that, due to the limitations of bending processes, the last 300mm of the arches are not bent, therefore the arches may not form a continuous smooth curve. This is normal and not a product fault.

Assembly of the arches

We recommend assembling the arches on the ground for safety reasons. Each complete arch can weight up to 180kg depending on the span and dimensions, so it is important to handle them carefully.

When working with steel connectors, trapped fingers are a possibility. Ensure your hands are kept well clear of the joints when pushing the sections into position.

Lift arches carefully from the centre using a fork lift, telehandler or crane.

Drive down the centre between the two containers, ensuring both ends of the arch line up with the spigot on the bottom rail at the furthest end.

With someone positioned on a suitable work platform or ladder on each side to assist with location, gently lower the arch onto the spigots. It is often easiest to locate one side at a time.

Once the arches are fully located, drive two tekscrews through both sides of the arches into the spigot inside, to lock both components together. Please note: fixings in the top surface of the arches should be avoided as they can wear holes in the fabric cover.

With all the arches in position, fully tighten the U bolts at both ends of the two containers. Once this is complete, weld the spacers on the underside of the bottom rail to the container roof with a continuous 6mm weld.

Dress the welds with a grinder if needed to remove any sharp edges and neatly coat the welded area with a galvanising paint, either hand-applied or from an aerosol can.

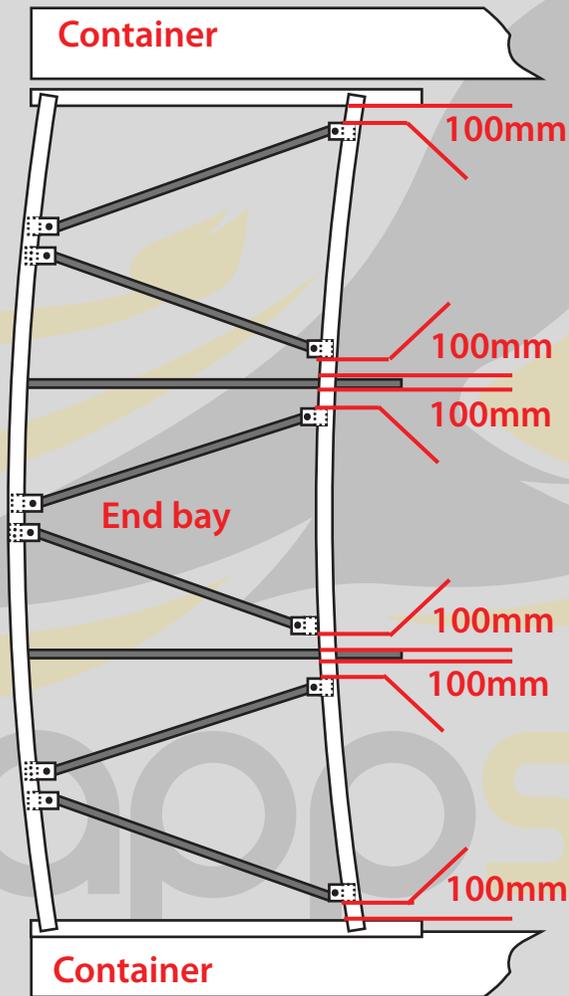
For applications where containers cannot be welded to, ask our team about our roof clamp brackets.



Installing the arches

As with all construction sites, extra caution must be taken by pedestrians and machine operators when lifting the arches. Drivers must ensure that other workers are standing well clear of arches when being lifted. Once they are vertical, it helps to have a competent person with suitable PPE standing at each end of the arch to steady it and prevent it swinging uncontrollably.

When using work platforms and ladders, ensure best health and safety practices are adhered to. The machine operator should stop work if this is not the case, to avoid accidents.



There are two sizes of bracing. Run the shorter braces horizontally from end-to-end of the Zappshelter, bolting to the lugs underneath the arches. Repeat for all points at which the lugs protrude.

Working from the inner arch, fix a fixing plate 100mm up from the bottom with four tekscrews into the underside of the arch, leaving the bolt-hole protruding.

Bolt the diagonal braces to the fixing plate and rotate to meet the outer arch. At the point they meet, fix another plate underneath the arch, and bolt the free end of the diagonal brace to it. Repeat for the entire bay.



Installing the bracing

With the exception of the ZS0606, all Zappshelter models have bracing in at least one end bay. The larger models may require it at both ends.

When handling the long tubular sections, it is important to be aware of others around you. It is also important to position a scissor lift or similar appropriate raised platform at the point at which you are working. Never hang over the side, and never climb the safety rails.

Ensure any fixings on the outside of the frame that will come into contact with the cover are covered with a piece of duct tape to avoid a wear point.

Lift the cover onto the the front of the starting container. For the purpose of this guide, we assume the installation will work from left to right. Ensure the pack faces the direction of the marked arrow. Remove the outer packaging and begin unrolling the cover towards the back of the container.

Once unrolled, insert the tensioning tubes into the preformed pockets on the left-hand side of the cover. When the tube is almost fully inserted, add another to the end of it and secure with wafer-head self-tapping screws through the predrilled holes. Ensure the tube clears the cut-outs in the pockets. Repeat this process for the opposite side of the cover.

On the left-hand side of the cover, feed the tails on the ratchet tensioners under the bottom rail through the cover cut-outs and back into the ratchet tensioner. Position so that the tube can be attached to the bottom rail of the Zappshelter. Do not fully tighten the tensioners at this stage.

Attach a rope onto the tube for the far side of the shelter in three evenly spaced positions along the length using the cut-outs provided.

Once secured, pull the ropes over the arches and bracing to the opposite side, using a scissor lift or similar.



Preparing the cover

It is important to remember to use appropriate safety equipment and to follow accepted procedures when working at height.

Before unwrapping the cover, sweep the top of the container carefully to ensure no sharp objects are under the cover when rolled out.

Ensure great care is taken when opening the outer packaging and unwrapping the cover to avoid damage.



Bring all the ropes together at the far side of the right-hand container and attach to a forklift or similar machine that can pull the cover over. Please note that, whilst this process can be done manually, the tension on the cover must be maintained at all times, especially when it is windy.

Take up the slack on the ropes, while others assist the cover over the arches. It is imperative to follow the cover to ensure it doesn't catch or snag.

Once the cover starts to move outwards towards the direction of pull rather than down the slope, stop pulling but maintain the tension on the ropes.

Attach ratchet tensioners to the other bottom rail and tighten just enough to allow the ropes to be released.

There should be a gap at both sides of the shelter, between the cover and the bottom rail. If the gap is not equal, carefully release the tensioners on one side and tighten at the other to make the gap equal.

There will be four ratchet tensioners left, with a hook on the end. Add one of these to the tensioning straps that hang from the cover of the front and back edges of the cover. Locate the hook through the outrigger at each corner and loosely tighten.

The cover is almost ready for its final tensioning.

Pulling the cover

When pulling the cover over the arches, wind can be a challenge. Ensure the necessary safety equipment is in place.

Ensure you have both sides of the cover well secured with tension on the ropes. At no point in the procedure should the ropes be slackened until the second set of ratchets have been attached. This is for the safety of people working on the project and in the vicinity, as well as for the protection of the cover.

Before tightening further, ensure the front and back edges of the cover are overhanging the first and last arches in equal amounts.

Once the front and back overhang are equal, fully tighten the ratchet tensioners between the four corners and the outriggers. This ensures the cover is stretched taut from end to end.

Using two people, tighten opposite ratchet tensioners at once. Move along the Zappshelter tightening the cover a little at a time, working back and forth until all the ratchet tensioners are fully tightened.

A rope is pre-inserted into the bottom edge of the cover on both sides. Slide the aluminium profile provided onto the cover with the rope as a guide. Once in place along both full lengths, fix down to container roof with tek screws.

Once tools and equipment have been packed away, rubbish disposed of and the site tidied, give all ratchet tensioners a final tightening.



Finishing the cover

When working with ratchet tensions, ensure fingers are kept well clear of the mechanism. Similarly, when sliding the aluminium channel into position down the length of the Zappshelter, take care not to cut fingers on the sharp edges.



Zappshelters are engineered to last many, many years. However, like any piece of equipment, the length of time it will last for depends on how it is looked after. Below are a few precautionary tips to ensure your Zappshelter stays in perfect condition:

1. Ensure the cover is fully tensioned at all times. A routine check on the ratchet tensioners will greatly extend the life of the Zappshelter.
2. Inform machine operatives that the cover is a fabric and to be careful when working with machines in the area, such as forklift trucks.
3. The structures are designed for snow, but it will increase the lifespan if a heavy snowfall is removed, taking care not to slip.
4. Keep welding sparks at bay. Whilst welding is a common use for a Zappshelter, apply commonsense when welding close to the cover.
5. If the cover gets ripped or punctured, repair immediately. Call our customer care team who can arrange this for you.
6. If dismantling and re-erecting elsewhere, take care not to lose components or damage the structure.

Care of your Zappshelter

We know you will be happy with your Zappshelter. Should you have any queries about it, please do not hesitate to contact our customer care team who will be willing to help.

Should you wish to extend your Zappshelter, ask us about our joining kits - a great way to join one Zappshelter to another.

Zappshelter was designed to be mounted on standard 20ft or 40ft shipping containers. However, with numerous other needs to be met, we have seen many other solutions, including precast concrete bunker walls and blocks, and purpose-built steel frames.

We can adapt Zappshelter to suit other anchoring methods using specially designed brackets and fixings. Our technicians can also fabricate valley and box gutters to suit systems that require multiple Zappshelters in a row.

For help and support with your project, please get in touch with our team.



Other support structures

A separate Installation guide is available for end walls, clamp brackets and other accessories. Please ask our sales team for more information.



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